

REMARKS

Claims 1-6 are pending in the present application.

The present invention provides, *inter alia*, a laminated film for stretch wrapping comprising at least three layers, wherein the laminated film has both surface layers comprising, as a main component, component (A) which is an ethylene polymer, and has at least one intermediate layer formed of a mixed resin layer comprising, as a main component, a resin composition containing the following component (B) in an amount of 30 to 75 % by weight:

a polypropylene resin having controlled stereoregularity satisfying the following requirements (1) and (2):

(1) a meso pentad fraction [mmmm] as determined from a  $^{13}\text{C}$ -NMR spectrum is 0.2 to 0.7, and

(2) a racemic pentad fraction [rrrr] and (1-mmmm) satisfy the following relation:

$[\text{rrrr}/(1\text{-mmmm})] \leq 0.1$ ;

the following component (C) in an amount of 20 to 60 % by weight:

a crystalline polypropylene resin having a crystal melting peak temperature of 120°C or higher; and

the following component (D) in an amount of 5 to 30 % by weight:

at least one resin selected from the group consisting of petroleum resin, terpene resin, coumarone-indene resin, rosin resin, and hydrogenated derivatives thereof (Claim 1).

Applicants submit that the cited art fails to disclose or suggest such a laminated film for the reasons given below. Reconsideration of the outstanding rejections is respectfully requested.

The rejection of Claims 1, 2, and 4-6 under 35 U.S.C. §103(a) over US 5,888,640 (Marotta et al) in view of WO 2001/096490 (Kijima et al, US 2004/0039117 taken as translation) is respectfully traversed.

Marotta et al disclose a metallized uniaxially heat-shrinkable, biaxially oriented, multilayer film having a polypropylene-containing-core layer, said core layer comprising isotactic polypropylene and a modifier which reduces the crystallinity of the propylene containing core layer (see column 3, lines 1 to 7).

Marotta et al disclose a modifier of polyolefins other than isotactic polypropylene which can be selected from the group consisting of atactic polypropylene, syndiotactic polypropylene, ethylene-propylene copolymer, propylene-butene-1 copolymer, ethylene-propylene-butene-1 terpolymer, polybutene-1, polyethylene and linear low density polyethylene (see column 3, lines 33 to 39).

Marotta et al also disclose the core layer comprising polypropylene preferably isotactic polypropylene, mixed with 2 to 10 wt.% of ethylene-propylene copolymer moodier containing 2 to 7 wt. % ethylene, the balance being propylene and having crystalline melting point of about 125 to 150°C (see column 4, lines 22 to 31).

However, at no point do Marotta et al disclose or suggest a laminated film for stretch wrapping comprising at least three layers, wherein the laminated film has both surface layers comprising, as a main component, component (A) which is an ethylene polymer, and has at least one intermediate layer formed of a mixed resin layer comprising, as a main component, a resin composition containing the following component (B) in an amount of 30 to 75 % by weight:

a polypropylene resin having controlled stereoregularity satisfying the following requirements (1) and (2):

(1) a meso pentad fraction [mmmm] as determined from a  $^{13}\text{C}$ -NMR spectrum is 0.2 to 0.7, and

(2) a racemic pentad fraction [rrrr] and (1-mmmm) satisfy the following relation:

$$[\text{rrrr}/(1\text{-mmmm})] \leq 0.1;$$

the following component (C) in an amount of 20 to 60 % by weight:

a crystalline polypropylene resin having a crystal melting peak temperature of 120°C or higher; and

the following component (D) in an amount of 5 to 30 % by weight:

at least one resin selected from the group consisting of petroleum resin, terpene resin, coumarone-indene resin, rosin resin, and hydrogenated derivatives thereof, as defined in Claim 1 of the present application.

In the present invention, when the meso pentad fraction [mmmm] of the polypropylene resin having controlled stereoregularity serving as component (B) is (1) in excess of 0.7, flexibility is reduced, thus, a film formed from the composition is difficult to satisfy characteristics required for serving as a stretch wrap film such as wrapping efficiency, wrapping finish, elastic recovery, and bottom sealing property, when the meso pentad fraction [mmmm] is (1) less than 0.2, crystallinity is excessively lowered, thereby readily forming aggregation of feed material pellets and lowering film formability. When the ratio of racemic pentad fraction [rrrr] to (1-mmmm),  $[\text{rrrr}/(1\text{-mmmm})]$  is (2) in excess of 0.1, feed material pellets may become sticky and may be aggregated during storage.

Marotta et al also do not disclose or suggest the intermediate layer composed of the resin composition containing the component (B) in an amount of 30 to 75 % by weight, the component (C) in an amount of 20 to 60 % by weight and the component (D) in an amount of 5 to 30 % by weight.

In the present invention, when the component (B) content is less than 30 % by weight or component (C) content is in excess of 60 % by weight, the characteristics of the polypropylene resin of the present invention having controlled stereoregularity cannot be fully attained, and elastic recovery and flexibility of the obtained film tends to decrease.

When the component (B) content is in excess of 75 % by weight or the component (C) content is less than 20 % by weight, the obtained film has excessive flexibility resulting in impaired cut property, poor heat resistance, thereby failing to fully attain practical heat sealability.

When the component (D) content is in excess of 30 % by weight, mechanical strength and low-temperature characteristics are impaired and there arise problems such as tearing of the obtained film, and bleeding of petroleum resin on the film surface as time elapsed, resulting in adhesion between each other in film roll products. When the component (D) content is less than 5 % by weight, restoration behavior of obtained film against elongation is instantaneous, thus, the elongated film happens to be undesirably restored during very short period of folding the film under the bottom of tray, when wrapping is carried out by the use of an automatic wrapping machine.

During examination, statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the recited purpose or intended use results in a structural difference (or, in the case of process claims, manipulative difference) between the claimed invention and the prior art. If so, the recitation serves to limit the claim. See, e.g., *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963) Indeed, a "preamble may provide context for claim construction, particularly, where ... that preamble's statement of intended use forms the basis for distinguishing the prior art in the patent's prosecution history." *Metabolite Labs., Inc. v. Corp. of Am. Holdings*, 370 F.3d 1354,

1358-62, 71 USPQ2d 1081, 1084-87 (Fed. Cir. 2004). Applicants submit that, as is clear above, the limitation "for stretch wrapping" is not a preamble intended use limitation but an essential limitation to attain the present invention.

Kijima et al disclose a polyolefin resin for hot melt adhesives comprising a propylene polymer [I] in an amount of 20 to 99 mass %, and an adhesive capacity applying resin [II] in an amount of 80 to 1 mass %, wherein the propylene polymer [I] satisfies the following requirements of:

- (1) a meso pentad fraction (mmmm) is from 0.2 to 0.6; and
- (2) a racemic pentad fraction (rrrr) and (1 -mmmm) satisfy the following relation:  
$$[rrrr/(1 -mmmm)] \leq 0.1$$
 (see claim 1).

Kijima et al also disclose a rosin resin, a texene resin, a petroleum resin, and those hydrogenated products as the adhesive capacity applying resin [II] (see page 3, paragraph [0045]).

However, Kijima et al only disclose hot melt adhesives comprising two component of a propylene polymer [I] in an amount of 20 to 99 mass %, and an adhesive capacity applying resin [II] in an amount of 80 to 1 mass %.

Kijima et al, as well as Marotta et al do not disclose or suggest the laminated film for stretch wrapping comprising at least three layers.

Moreover, Kijima et al do not disclose or suggest the laminated film for stretch wrapping comprising at least three layers, wherein the laminated film has at least one intermediate layer comprising a resin composition containing three components of the component (B) in an amount of 30 to 75 % by weight, the component (C) in an amount of 20 to 60 % by weight and the component (D) in amount of 5 to 30 % by weight.

Applicants further submit that Claim 6 further defines the properties of the laminated film for stretch wrapping comprising at least three layers, wherein the laminated film has at one intermediate layer comprising a resin composition containing three components of the component (B) in an amount of 30 to 75 % by weight, the component (C) in an amount of 20 to 60 % by weight and the component (D) in amount of 5 to 30 % by weight.

When the storage modulus ( $E'$ ) is less than  $5.0 \times 10^7$  Pa, the film has excessive flexibility that induces small stress against deformation, resulting in unfavorable operability, poor powerfulness of the film of packed products. A film having these properties would not be suited to be a stretch film.

When the storage modulus ( $E'$ ) is in excess of  $5.0 \times 10^8$  Pa, the film is less stretchable due to high hardness, resulting in deformation or rupture of trays.

When  $\tan \delta$  is less than 0.2, restoration behavior of the obtained film is instantaneous, thus, the elongated film happens to be undesirably restored during a very short period of folding the film under the bottom of the tray, resulting in poor powerfulness of the film and in occurrence of wrinkles.

In addition, thermal melt adhesion of the film during stretch wrapping cannot be sufficiently performed, leading to poor heat-seal conditions of the bottom of tray, *i.e.*, the film at the bottom of packaged products is readily detached during the course of transportation and display.

Further, when  $\tan \delta$  is in excess of 0.8, the exhibits elastic deformation, although good wrapping finish is attained. Thus, the film of packed products has weak tension against outer force, and the film on the upper side of trays is readily slackened through stacking of the packed products during transportation and display, leading to decrease in quality of the products.

In the case of automated wrapping, such film readily causes problems such as chuck failure, since the film is well elongated in the machine direction.

Thus, it is evident that the properties of the laminated film described in Claim 6 are not latent or obvious properties of the film.

Accordingly, in view of the foregoing, Applicants submit that the combined disclosures of Marotta et al and Kijima et al fail to render the presently claimed invention obvious.

Withdrawal of this ground of rejection is requested.

The rejection of Claim 3 under 35 U.S.C. §103(a) over US 5,888,640 (Marotta et al) in view of WO 2001/096490 (Kijima et al, US 2004/0039117 taken as translation) and further in view of US 4,127,688 (Bieler) and US 4,853,265 (Warren) is respectfully traversed.

Applicants submit that Claim 3 depends from Claim 1. Accordingly, for the reasons stated above Marotta et al and Kijima et al fail to render Claim 1 obvious. Bieler and Warren fail to compensate for the deficiencies in the disclosures of Marotta et al and Kijima et al. As such, Claim 1 and by dependence, Claim 3 is not obvious in view of the combined disclosures of Marotta et al, Kijima et al, Bieler, and Warren.

Specifically, Bieler disclose a thermoplastic film laminate in the packaging field that has a layer of polyethylene or ethylene vinyl acetate copolymer (hereinafter referred to as "EVA") and a layer of saran laminated thereto. The vinyl acetate content of the ethylene vinyl acetate copolymer layer may range from as low as 2 or 3% to as high as 25 to 30% or more depending upon the desired packaging application and in order to strengthen polyethylene or ethylene vinyl acetate copolymer layers and to render them heat shrinkable after stretch orientation it has been necessary to cross-link the polyethylene or ethylene vinyl

acetate copolymer material preferably by irradiating the materials with high energy electrons (see column 2, lines 21 to 39).

However, Bieler does not disclose or suggest the laminated film for stretch wrapping comprising at least three layers, wherein the laminated film has both surface layers containing component (A), which is an EVA polymer, and has at least one intermediate layer comprising a resin composition containing the component (B), the component (C), and the component (D) described above.

More specifically, Bieler does not disclose or suggest the use of an EVA polymer in both surface layer of the laminated film comprising at least three layers composed of both surface layers and at least one intermediate layer.

Warren discloses a thermoplastic, multi-layer, heat-shrinkable packaging film having improved orientation characteristics comprising at least two layers of a copolymer of ethylene and vinyl acetate wherein the melt index of the ethylene-vinyl acetate of one layer is different from the melt index of the ethylene-vinyl acetate of the other layer about 0.3 dg/minute or more (see claim 1).

However, Warren and Bieler do not disclose or suggest the use of an EVA polymer in both surface layer of the laminated film comprising at least three layers composed of both surface layers and at least one intermediate layer.

Accordingly, the claimed invention would not be obvious in view of the combined disclosures of Marotta et al, Kijima et al, Bieler, and Warren.

Withdrawal of this ground of rejection is requested.



The objection to the specification as lacking the cross-reference to related applications is believed to be obviated by the amendment to the specification herein. Withdrawal of this ground of objection is requested.

Applicants submit that the present application is in condition for allowance. Early notification to this effect is respectfully requested.

Respectfully submitted,

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